

# Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel



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## Check for Southwestern Corn Borer



Southwestern corn borer larvae.

Southern counties across central and southwest Kansas are reporting high numbers of southwestern corn borer egg masses and are treating those fields now.

First-generation infestations begin in late June and consist of dark-spotted white worms that feed for five to 10 days on leaf tissue in the plant whorl, then move downward to begin tunneling within the stalk. **The second (and most damaging) generation occurs in August.** Adult moths begin emerging and laying eggs starting around July 15 to July 23, with egg-laying reaching a peak somewhere between Aug. 1 to Aug. 15. The exact time of the beginning and peak of egg-laying is influenced by weather and geographic location. Eggs are deposited on leaves primarily in the ear region. Newly hatched larvae begin feeding on leaves, but prefer to feed

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on ear shoots, husks, and silks. Within 10 to 12 days, this generation also begins tunneling within the stalk, generally below the ear zone.

**Insecticide applications should be considered on susceptible corn hybrids when 20 to 25 percent of the plants are infested with eggs or newly hatched larvae.** Most corn was planted late in Kansas due to the late cold weather, so these fields could become heavily infested. Lodging, caused by girdling of stalk by the larvae, can be avoided if the corn is harvested before girdling begins. However in late planted fields, this is harder to achieve unless the corn is used for silage.



SW Corn borer moth and larvae (Photo by Armon Keaster)

Eggs of the second generation are deposited at the ear zone or a node above or below the ear. A female moth is capable of laying 100 to 400 eggs in her short lifespan (approximately 5 days).



Eggs are initially creamy white but develop three red transverse bars within 36 hours of being laid, and these bars remain until the larva's emergence (approximately 5 days). (Photos courtesy of Univ. of TN, Inst of Ag.)

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NOTE: Corn hybrids containing European corn borer targeted Bt toxin should control both Southwestern and European corn borers, however, research suggests **some Bt types are less effective for Southwestern corn borer control, therefore** scouting fields that contain these Bt genes is important as well. K-state Efficacy trials in the past have shown that varieties in the Yieldgard family and Herculex family (see handy Bt table link below) work well for the second generation of SW corn borers, but may not provide 100% protection for the first generation. Since there are many new Bt products targeting moth larvae (Lepidopteran-above ground Bt) available today, K-State efficacy trials will begin in 2014 to evaluate the current hybrids.

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Check this Handy BT Table to see if your corn variety controls for corn borers.

[http://labs.russell.wisc.edu/cullenlab/files/2013/05/Handy\\_Bt\\_Trait\\_Table.pdf](http://labs.russell.wisc.edu/cullenlab/files/2013/05/Handy_Bt_Trait_Table.pdf)

*For addition information and control options for Kansas visit:*

<http://entomology.k-state.edu/extension/insect-information/crop-pests/corn/swcb.html>

Sarah Zukoff -- Southwest Research and Extension Center

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## HARLEQUIN BUG...BEAUTIFUL BUT DESTRUCTIVE!

The harlequin bug (*Murgantia histrionica*) is a very beautiful insect with its black and orange coloration; however, it is a very destructive pest to vegetable crops. In fact, both adults and nymphs are out “in full force” in vegetable gardens. Harlequin bugs are 1/2 to 5/8 inches in length, and are shield-shaped since they are a type of stink bug. They feed primarily on cole crops such as broccoli, brussel sprouts, cabbage, cauliflower, and kohlrabi. Additional plant hosts in which harlequin bugs will feed upon if cole crops are not available include asparagus, bean eggplant, okra, radish, potato, and tomato.



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Adults emerge in early summer and may feed on weeds such as wild mustard. After finding a suitable host plant adult females lay eggs on the undersides of leaves. The eggs appear as uniform rows of tiny white barrels with distinctive black hoops. Each female can lay 30 clusters (containing approximately 12 eggs) of 300 to 500 eggs. Nymphs emerge from eggs and feed in the same general vicinity where the eggs were laid. Nymphs take 5 to 6 weeks to develop into adults with 5 to 6 nymphal instars. Nymphs resemble adults but are smaller and more rounded in shape. In addition, they lack wing covers. Both adults and nymphs

have piercing-sucking mouthparts that are used to remove plant fluids. Harlequin bug feeding causes plant stunting and leaf distortion, and yellow to brown spotting on leaves. They can cause plant death depending on the severity of the infestation and plant size. Adults or nymphs feeding on fruit may cause scarring or “cat-facing.” Harlequin bug overwinters as an adult in plant debris. There may be several generations per year.

Harlequin bug populations can be regulated by hand-picking adults and nymphs, and then placing them into a container filled with soapy water. You may want to use gloves as harlequin bugs will emit a foul odor upon being handled. In addition, weed management in and around the garden will reduce the potential for alternative hosts and overwintering sites. It has also been recommended to trap harlequin bugs by placing “old” turnip or cabbage leaves on the ground. Harlequin bugs will congregate underneath the leaves. The next day, the leaves can be destroyed along with the harlequin bugs. Insecticides can be used to deal with harlequin bug populations; however, the nymphs are more susceptible than the adults. There are a variety of insecticides commercially available that may be used to regulate harlequin bug populations including pyrethrins, carbaryl (Sevin), and potassium salts of fatty acids (insecticidal soap). Be sure to read the label of any insecticide to ensure it is legal to use on a specific crop and that “bugs” are on the label. In order to enhance the effectiveness of the insecticide application it is essential to target the nymphs and make repeat applications, and thoroughly cover all plant parts in order to kill as many harlequin bugs as possible before they damage plants.



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Raymond Cloyd

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## Corn Earworms in Sorghum and Soybeans

Corn earworm larvae can still be found infesting corn in central KS. The corn seems to be developing a little slower than usual, probably because of the cloudy, wet weather, which has also seemed to slow down corn earworm development. However, they are still developing and are still in various stages in the corn—from small 1<sup>st</sup> instars to mature larvae ready to pupate (see photo). This means, as the corn matures beyond the stage that is susceptible to earworms, they will start infesting sorghum and soybeans. They infest the marketable product in both crops, thus can reduce yields relatively quickly. Sorghum is most susceptible from flowering to soft dough, and the general treatment threshold is 5% loss/larva/head. This is generally true for any of the "headworms" that may infest sorghum. The treatment threshold in soybeans, generally, is one larva (sometimes called soybean podworm)/row ft., while pods are filling, as they will feed directly on the developing seeds within the pods. So, scouting for the worms while they are still small, and thus, before they have caused much damage is critical and should start now. These insects are relatively vulnerable to insecticide applications at this stage, so please consult the KSU Sorghum and/or Soybean Insect Management Guides available at your local Extension office or at:

<http://entomology.k-state.edu/extension/insect-information/crop-pests/> for registered insecticides, etc.



Jeff Whitworth

Holly Davis

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## Insect Diagnostic Laboratory Report

<http://entomology.k-state.edu/extension/diagnostician/recent-samples.html>

Eva Zurek

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Sincerely,

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